

REMARKS/ARGUMENTS

Reexamination and reconsideration of this Application, withdrawal of the rejection, and formal notification of the allowability of all claims as now presented are earnestly solicited in light of the above amendments and remarks that follow.

Claims 11-20, 22-24, 26, 27, 31, 34, and 39-45 are pending in the application. Claims 8, 9, 32, and 33 have been cancelled in light of amendments made to independent claim 31, but without prejudice or disclaimer. Independent claim 31 has been amended to remove the subject matter added with the last response, and that deleted subject matter is now presented as dependent claim 45. In addition, independent claim 31 has been amended to recite that the colorant in the core component is a phosphorescent colorant that is present in an amount of about 0.1% to about 9% by weight. Applicants respectfully submit that these amendments are supported throughout the specification, such as on page 13 (paragraph 52), Examples 1 and 2, and the original claims. It is respectfully submitted that no new matter is introduced by these amendments. Accordingly, Applicants present these amendments as a supplemental response to the outstanding Office Action.

Applicants appreciate the courtesies extended by the Examiner in a telephonic interview initiated by the Examiner on August 21, 2007. The two previously-cited references were discussed. In particular, the Shimizu and Magill patents were discussed. Further, Applicants' representative and Examiner Edwards discussed the amendment of independent claim 31 presented herein regarding the amount of phosphorescent colorant. In addition, the surprising results set forth in the examples of the application were discussed. The Examiner gave the impression that such an amendment would be favorably received as it relates to the art of record.

Claims 11-13, 21-23, 26, 27, 31-34, and 39 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the Shimizu patent in combination with the Magill patent. Claims 11-13, 26, 27, 30, 31, 39-42, and 44 stand rejected under 35 U.S.C. §103(a) as being unpatentable over the Magill patent taken alone or optionally taken with U.S. Patent No. 4,623,579 to Quon. Applicants respectfully traverse these rejections as further explained below.

As presently claimed, the invention is directed to a sheath and core bicomponent fiber wherein the core comprises a phosphorescent colorant present in the amount of about 0.1 to about 9% by weight and wherein the core comprises less than about 20% of the cross-sectional area of the bicomponent fiber. It is respectfully submitted that there are no documents of record that disclose a sheath and core bicomponent fiber comprising these characteristics. For example, as previously noted, the Shimizu reference does not teach or suggest a fiber wherein the core both comprises a phosphorescent colorant present in the amount of about 0.1 to about 9% by weight and comprises less than about 20% of the cross-sectional area of the bicomponent fiber. Similarly, the Magill patent fails to teach or suggest such a fiber. In particular, the Magill reference fails to provide any guidance whatsoever as to an amount of phosphorescent colorant. In fact, phosphorescent colorants are not specifically mentioned at all in the Magill patent. For these reasons alone, Applicants respectfully submit that any rejection based on these two patents is improper and respectfully request reconsideration and withdrawal of these rejections.

In addition, Applicants again note that the specification includes evidence of surprising results that can be associated with this claimed fiber. In particular, in Example 1, Applicants prepared a comparative nylon yarn spun using a uniform blend of phosphorescent pigments in a nylon 6 polymer. The total pigment content was 6% by weight of the fiber. This comparative yarn was compared to a bicomponent yarn prepared according to the invention. The inventive yarn also comprised nylon 6 and the same phosphorescent pigment at the same overall pigment loading (i.e., total pigment content in the fiber was still 6% of the weight of the entire fiber). However, in the bicomponent inventive example, all of the pigment was confined to the core section of the bicomponent filaments instead of uniformly blended throughout the fiber structure. More specifically, the phosphorescent pigment was confined to a core that comprised only 20% of the cross-sectional area of each bicomponent fiber. In brightness testing, the inventive bicomponent fiber glowed with greater brightness than the comparative yarn, illustrating that concentration of an amount of pigment in the core section of a bicomponent fiber can provide greater brightness in a phosphorescent fiber than homogeneously mixing the same amount of pigment throughout a monocomponent fiber. It is further noted that the inventive fiber of this example is not described in any reference of record.

Example 2 provides a similar result. In this example, a first inventive fiber was prepared to include 6% by weight phosphorescent pigment contained in a core comprising only 20% of the total cross-sectional area of the fiber. A second fiber sample was prepared as a comparative, and the comparative fiber also included 6% phosphorescent pigment. However, in the second fiber, the pigment was evenly dispersed throughout the entire fiber cross-section. Both were made using the same spinning and drawing conditions and both had the same denier per filament. When these two samples were exposed to the same light source, the bicomponent version with the phosphorescent pigment in the core emitted an average of 17% more light than the comparative example. Again, these results indicate that, surprisingly, even when the same amount of pigment is utilized, confining the total amount of pigment in a core section of a bicomponent fiber can result in enhanced brightness associated with the phosphorescent pigment.

It is respectfully submitted that these surprising results also weigh heavily against any obviousness rejection of record. Accordingly, for this additional reason, Applicants respectfully request reconsideration and withdrawal of the rejections of record.

It is not believed that extensions of time or fees for net addition of claims are required, beyond those that may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required therefore (including fees for net addition of claims) is hereby authorized to be charged to Deposit Account No. 16-0605.

Respectfully submitted,

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